

are directly and indirectly linked with HRQoL of TB patients. **METHODS:** A prospective cross-sectional study was conducted at a tertiary care hospital in a province of Pakistan, the Punjab. Data was collected by using WHOQOL-BREF questionnaire (Urdu version, pretested for reliability and validity) by means of face-to-face interviews and where possible by gender-based focus group sessions. In addition, facilitators also used few open-ended questions in order to get patients' demographic and socioeconomic data. Participants were also asked to share their personal experiences of being diagnosed and treated with TB and what impact it had on their life style. All obtained data were analyzed using descriptive and inferential statistics. **RESULTS:** The overall Cronbach's alpha coefficient of the revalidated WHOQOL-BREF questionnaire was 0.785. The confirmatory factor analysis also provided an acceptable fit to a four-factor model in the studied sample. The scores for negative feelings, blue mood, depression, living place, personal relationships and sex life were significantly different in the psychological health and social relations domains. Age, gender and physical exercise were also significantly associated with the HRQoL of the patients. **CONCLUSIONS:** The WHOQOL-BREF was reliable and valid in the assessment of the HRQoL of TB patients in Pakistan. Despite the ability to cure TB, there was a significant impact on HRQoL of the TB patients. Till today, much attention is spent on curative and preventative mechanisms whereas the impact of TB on HRQoL is often neglected.

PRS79

SYSTEMATIC LITERATURE REVIEW ASSESSING DATA ON THE BURDEN OF ALLERGIC RHINITIS FROM A COST AND QUALITY OF LIFE PERSPECTIVE

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OBJECTIVES: To assess published data on perennial allergic rhinitis/house dust mite allergic (PAR) patients and seasonal allergic rhinitis/grass pollen allergic (SAR) patients in order to establish the burden of allergic rhinitis (AR) and allergic asthma from both a quality of life (QoL) and cost perspective. **METHODS:** A systematic literature review was conducted using Medline and Embase in eight pre-specified countries for the time period of January 2000 to January 2014. Search terms were related to QoL and/or cost. A total of 2963 abstracts and titles were identified. 50 abstracts met predefined criteria and provided data for calculations and collation. **RESULTS:** Based on the RQLQ, the overall QoL of PAR patients was significantly worse than that of SAR patients (2.73 ± 0.12 cf. 2.04 ± 0.18, p ≤ 0.001). In general, practical problems (mean: 3.80 ± SE: 0.08) and activities (mean: 3.70 ± SE: 0.11) were the most affected domains. Measured by the physical component score from the SF-36 questionnaire, the overall QoL of PAR patients was worse (p = 0.002) than that of SAR patients (49.06 ± 1.26 cf. 64.19 ± 7.89). For both PAR and SAR patients, domains measured by the SF-36 showed that vitality (mean: 59.95 ± SE: 3.24) was the most affected domain. Based on RQLQ, allergy immunotherapy improves eye symptoms, nasal symptoms, activities and practical problems the most in grass allergic patients. Direct comparison of total direct and indirect costs was complicated by differences in individual costs assessed among studies, however, the primary burden of costs is indirect and caused by high absenteeism and presenteeism. **CONCLUSIONS:** The QoL and economic burden of AR was substantial in the countries included in this review. However, limitations regarding the number of studies per country, heterogeneity between studies, and the lack of presented data have restricted the conclusions that could be drawn.

PRS80

PROSPECTIVE STUDY ON QUALITY OF LIFE (QOL) OF BRONCHIAL ASTHMA PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL

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OBJECTIVES: To determine the Quality of Life (QoL) of bronchial asthma patients in a tertiary care teaching hospital at baseline and at follow up. **METHODS:** The study was conducted for a period of 6 months among 100 bronchial asthma patients, with and without co-morbidities, admitted to the pulmonary and medicine wards in the university hospital after obtaining the ethical clearance. The quality of life was assessed using Asthma Quality Of life Questionnaire (AQLQ). Patients were followed up after 4 weeks from the date of discharge. Statistical analysis was performed using SPSS version 20. **RESULTS:** The mean age of the study population was 53.30 ± 14.59 having 61% of the patients as females. Data was analyzed by Wilcoxon signed rank test. The total score of QoL at follow up (5.94 ± 0.76) showed an improvement with a P value < 0.0001 (wilcoxon signed rank t test) when compared with baseline (3.92 ± 1.04). A significant improvement in symptoms was seen at follow up (6.05 ± 0.82) from baseline (3.93 ± 1.14). The activity limitation improved with a P value < 0.0001 (Wilcoxon signed rank t test) from baseline (4.00 ± 1.08) to follow up (5.92 ± 0.83). At follow up (5.97 ± 0.82) the emotional function showed an enhancement on comparing with baseline (3.92 ± 1.14). The environmental stimuli showed no significant changes at baseline (3.66 ± 1.29) and follow up (3.84 ± 1.34). **CONCLUSIONS:** The results of the study suggests that clinical pharmacists have a major role in improving patient knowledge and thereby significantly improve the quality of life of the patient.

PRS81

IMPACT OF NON-CONSENTED SWITCH AND SUBSEQUENT SWITCH IN ASTHMA MEDICATION: QUALITATIVE STUDY OF PATIENT PERSPECTIVE IN THE UK

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OBJECTIVES: Patient satisfaction with asthma treatment is associated with better adherence and achievement of treatment goals. While medication changes are sometimes instigated for clinical or financial reasons, changes without patients' knowledge or involvement ('non-consented switch' [NCS]) can impact symptom control and patient-health care provider (HCP) relationships. This study explored experiences of patients who had a NCS and subsequently requested and received a second switch (SS). **METHODS:** Interviews were conducted with 13 UK adult asthma

patients recruited through an agency, Twitter and Asthma UK's website. Participants had experienced a NCS and a SS < 3 years previously. Medication history and Asthma Control Test (ACT) scores were collected. Interviews were audio-recorded, and thematically analysed. **RESULTS:** The sample was 69% Caucasian, with six males and seven females, and a mean age = 47. Most were working full time or retired, and had many years since asthma diagnosis (mean = 22 years). NCS were related to reliever (n = 7), preventer (n = 4) or both (n = 2) medications with the most common NCS from one brand to another (n = 4). Participants reported negative feelings, difficulty using the medication and ineffective symptom control. Most participants used the NCS medication < 6 months (range < 24 hours–2 years). The SS for most was a return to their original pre-NCS medication (n = 11). Although most found getting their SS straightforward, this required at least two HCP visits for half the sample, and took up to two months to obtain. Most expected symptoms to improve following the SS but nine participants still had sub-optimal ACT scores. Lasting impacts included damaged relationships with HCPs, strong views about NCS and concern about NCS reoccurrence. **CONCLUSIONS:** Failure to inform and involve patients in medication changes can have lasting impacts. It is important to note that NCS can incur costs associated with rejection of medicines and additional consultations, thus negating any attempt at cost saving.

RESPIRATORY-RELATED DISORDERS – Health Care Use & Policy Studies

PRS82

EVALUATION OF SELECTED KEN-DRGS IN GREEK PUBLIC HOSPITALS: THE DEGREE TO WHICH THEY REFLECT ACTUAL EXPENDITURE AND AVERAGE LENGTH OF STAY

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OBJECTIVES: To evaluate the degree to which the officially pre-determined cost and average length of stay (ALoS) per selected KEN-DRG reflect actual resource use and to investigate other factors (e. g. size, type and location of hospital) correlated with charges and ALoS. **METHODS:** Data were from the Health Regions data base and included discharges, ALoS, and charges in NHS Hospitals for the selected KEN-DRGs. Predetermined ALoS and cost per KEN-DRG were derived from Gazette 946/27/03/2012. Continuous variables did not follow normal distribution, so non parametric methods (Spearman's correlation coefficient, Kruskal-Wallis test and Mann-Whitney test) were used. A two sided p-value ≤ 0.05 was considered statistically significant. **RESULTS:** Higher length of stay compared with the officially pre-determined was found for Chronic Obstructive Pulmonary Disease (COPD) with complications (10.8 vs 9 days), Bronchitis & Asthma with complications (5.8 vs 4 days), Bronchitis & Asthma without complications (2.7 vs 2 days) and Breast Cancer with complications (7.9 vs 5 days). Consequently, officially pre-determined cost for Breast Cancer with complications (€965), Bronchitis & Asthma with complications (€792) and COPD with complications (€1,446) represents less than 90% of total hospital charges (total actual average charge: €1,186; €929; €1,634 respectively). However, for the rest of the DRGs, under study, there were none or limited additional hospital charges. For all KEN-DRGs, size and population density was positively correlated with total charges (r_s = 0.12, p = 0.018; median for Athens = 863 & semi-urban = 752 p = 0.09 respectively). Moreover, for Bronchitis & Asthma with and without complications, population density was found to be positively correlated with ALoS (median for urban areas = 5.1 and semi-urban = 4.7; p = 0.09 and median for urban areas = 3 and semi-urban = 2.5; p = 0.03 respectively). **CONCLUSIONS:** The introduction of KEN-DRGs was a useful first step to modernize the hospital reimbursement system. However, further revisions are required in order for KEN-DRGs to become more useful.

PRS83

PATTERNS OF ASTHMA TREATMENT UTILIZATION IN NEWLY DIAGNOSED ELDERLY PATIENTS ARE INCONSISTENT WITH ASTHMA MANAGEMENT GUIDELINES

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OBJECTIVES: Asthma is under-diagnosed and under-treated in elderly, and utilization of asthma medications in this population is not well characterized. This study describes utilization patterns of asthma medications in newly diagnosed ≥ 50 patients. **METHODS:** Medicare enrollees are followed for 12 months after first asthma diagnosis between Q1 2004- Q3 2012 (ICD-9-CM code: 493*). Treatment pattern analysis was applied to initiators of asthma medications. Patients with > 1 prescription of second-line therapy following exposure to first-line therapy are considered therapy switchers or augmenters. Patients with history of chronic obstructive pulmonary disease are excluded (ICD-9-CM codes: 490, 491*, 492*, 494*, 495* & 496). **RESULTS:** Among 126,176 elders with asthma, 24,021 initiated asthma therapy within 12 months of asthma diagnosis (70% women, median age 70 years). 319 (1.3%) continued therapy with one drug class (first-line therapy); 13,940 (58%) discontinued first-line therapy; 3,469 (14.4%) switched to another drug class (second-line therapy); and 6,293 (26.2%) added second-line therapy (augmented). About 34% of patients initiated therapy with inhaled short-acting beta-agonists (SABA); majority of them either discontinued SABA or added a controller medication. 19% of elderly patients started with oral corticosteroids after asthma diagnosis, 77% discontinued them and 12% switched to another asthma controller. Among controller medications, inhaled corticosteroids (ICS)/long-acting beta-agonists (LABA) combination therapy, ICS monotherapy, and leukotriene antagonists respectively accounted for 19%, 12%, and 11% of treatment initiators. The majority of these anti-

inflammatory formulations were discontinued during 12 months after asthma diagnosis. **CONCLUSIONS:** Asthma treatment utilization patterns reflect poor asthma control among newly diagnosed elderly patients, and initiation of anti-inflammatory treatment after asthma diagnosis appears to be inconsistent with asthma management guidelines.

PRS84

DOCTORS' FAILURE IN OBSERVANCE OF THE COPD MANAGEMENT GUIDELINES: CASE OF THE CZECH REPUBLIC

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OBJECTIVES: The primary objective of this study was to examine the accuracy of the GOLD 2011 strategy implementation among the Czech respiratory specialists, esp. with respect to the patients' classification. The secondary objective was to explore what effect a misclassification has on inadequate use of inhaled corticosteroids (ICS). **METHODS:** Multicentre cross-sectional study was conducted among COPD specialists, consisting of general questionnaire and patient-specific forms. A subjective classification into the GOLD 2011 groups as practiced by the health care professionals was examined and then compared with the objective classification achieved by rigorous software-computed classification. Adequacy of the ICS prescription was evaluated with regard to the subjective classification. **RESULTS:** GOLD 2011 were claimed to be the leading guidelines for 143 out of 144 specialists involved, often accompanied by CPPS guidelines (83.3%) and the ACP/ACCP/ATS/ERS standards (50.7%). Based on 1355 patient forms, a discrepancy between the subjective and objective classification was found in 32.8% of cases. The most common reason for incorrect classification was erroneous symptoms assessment resulting in either under-estimation in 23.9% of cases and over-estimation in 8.9% of the examined patients' records. Specialists seeing more than 120 patients per month were most likely to misclassify their condition, i. e. in 36.7% of all seen patients. In general, whilst examining the subjectively-driven ICS prescription, it was found that 19.5% of patients received ICS incorrectly, while in 12.2% of cases the ICS was erroneously omitted. Furthermore, with consideration to the objectively computed classification, it was discovered that 15.4% received ICS unnecessarily, whereas in 15.8% of cases the ICS was not prescribed though, in fact, it would be adequate seeing the patient's condition. Women failed in correct prescription more frequently than men, predominantly by overprescribing ICS. **CONCLUSIONS:** Despite high awareness of the GOLD 2011 guidelines, its implementation is insufficient. Czech specialists tend to either under-classify or overuse the ICS.

PRS85

SOCIAL MEDIA MEETS POPULATION HEALTH: A SENTIMENT AND DEMOGRAPHIC ANALYSIS OF TOBACCO AND E-CIGARETTE USE ACROSS THE "TWITTERSPHERE"

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OBJECTIVES: Twitter, a popular social media outlet, has become a useful tool for the study of social behavior through user interactions called tweets. The location time, and message content of tweets provide invaluable social and demographic information for an applied comparison of social behaviors across the world. Our goal is to determine the density and sentiment surrounding tobacco and e-cigarette tweets and link prevalence of word choices to tobacco and e-cigarette use at various localities. **METHODS:** All tweets with geo-spatial coordinates are salvaged from the twitter-feed, representing approximately 1% of the entire twitter-sphere. Pattern matching by tobacco and e-cigarette related keywords yield approximately 20,000 affiliated tweets per month from North America. The emotionally charged words that contribute to the positivity of various subsets of regional tweets are quantitatively measured using hedonometrics. We examined the density of these behavioral tweet indicators by region and tested the relationship between tweeted smoking sentiments and time-space-type coordinates over a 4-month span. **RESULTS:** For states with ≥600 tobacco related tweets (N=30), we find a strong positive correlation (Pearson's $r=0.54$, $p<0.01$) between the relative tweet density per state and the average positivity of tobacco related tweets. However, state-to-state sentiment comparisons suggest the attitude toward tobacco use can vary. We also explore the relationship between the ratio of tobacco tweets per state-to-state smoking rate estimates. Our results illustrate significant variation in smoking sentiments by state and at varying regional scopes. **CONCLUSIONS:** It is anticipated that real-time analysis of nicotine and tobacco products using tweets will allow for more targeted forms of health policy planning and intervention. Regional density of nicotine and tobacco use related tweets yield insight to the prevalence of tobacco usage per capita. Sentiment analysis across the twitter-sphere can help illuminate hazardous health behavioral trends, which may lead to better targeting of health behavior interventions.

PRS86

SUSTAINABLE POLICY: HIGHER MEDICATION USE & ADHERENCE DURING REIMBURSEMENT OF PHARMACOLOGIC SMOKING CESSATION TREATMENTS

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BACKGROUND: The discussion on the reimbursement of Smoking Cessation Treatment (SCT) has known many stages in The Netherlands. From January 2011, SCTs were reimbursed, until January 2012 when the reimbursement of nicotine replacement therapies (NRTs) and pharmacotherapeutic SCT (pSCT) was discontinued. As of 2013, NRTs and pSCTs were again reimbursed for a maximum of one attempt per calendar year, provided they are accompanied by behavioural counselling. **OBJECTIVES:** To assess the impact of changes in reimbursement policy of pSCT on use and adherence. **METHODS:** A retrospective dispensing database

analysis was performed on real-world observational data from the years 2010-2013 in The Netherlands. Data on use and adherence was collected, in patients who were dispensed bupropion or varenicline in community pharmacies for the first time. Adherence was defined as using minimal 80% of the in guidelines recommended duration and intensity of use. **RESULTS:** The study cohort consisted of 4,412 users of pSCT. The number of prescriptions was stable at 0.5 prescriptions per 1,000 inhabitants (dispensing prevalence, dp) during 2010. The prevalence was on average 0.8 dp, with peaks in the 1st and 4th quarters of 2011. In 2012, the prevalence was stable at 0.4 dp. In 2013 was on average 0.5 dp, with a small peak in the 1st quarter. Adherence was 18% in 2010 and 2012 (non-reimbursement period), and 21% in 2011 and 2013 (reimbursement period). **CONCLUSIONS:** Not only the likelihood of starting smoking cessation, but also the extent of adherence to pharmacologic smoking cessation is higher during reimbursement. Increasing the awareness of health care providers on adherence issues is warranted.

PRS87

MONTE-CARLO SIMULATION TO ESTIMATE THE HEALTH CARE COSTS AVOIDED WITH FLUTICASONE FUROATE/VILANTEROL DUE TO EXACERBATION RATE REDUCTION IN SPANISH COPD PATIENTS

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OBJECTIVES: Exacerbations are considered one of the main drivers of costs of Chronic Obstructive Pulmonary Disease (COPD). In moderate to severe COPD patients with a history of exacerbations, the addition of an inhaled corticosteroid (ICS) to a long acting β_2 agonist (LABA) has been associated with a decreased rate of exacerbations versus treatment with LABA alone. This study aims to estimate the health care costs that the addition of the ICS Fluticasone Furoate (FF) to the LABA vilanterol (VI) could avoid versus LABA monotherapy in Spanish patients due to the reduction of the rate of exacerbations. **METHODS:** The number of moderate to severe COPD patients >40 years old with a history of exacerbation potentially treated with FF+VI was estimated from Spanish prevalence data. 1-year Monte-Carlo simulations (one simulation per patient) were developed to simulate the number of moderate and severe exacerbations and the health care costs avoided with FF+VI versus VI from the National Health System (NHS) perspective. Monte-Carlo simulation was chosen as it allows simulating the effect of changes in different parameters obtained from clinical studies to describe real-life distributions. Parameters used in the simulations were the yearly rate of moderate-severe exacerbations with FF+VI and VI obtained from pooled-analysis of two head-to-head clinical trials (NCT01009463 and NCT01017952) and the costs of moderate and severe exacerbations obtained from an observational study in real-life Spanish setting. **RESULTS:** 18,098 patients were included. FF+VI could avoid 7,424 moderate and severe exacerbations (95% confidence interval 7,411; 7,438) vs VI. The reduction in the number of exacerbations could lead to average health care costs avoided to the NHS of 3,278, 382€ (3,066, 703€; 3,336, 392€) in a year. **CONCLUSIONS:** Treatment with FF+VI could decrease the economic burden associated with COPD reducing the health care costs for the Spanish NHS due to the decreased rate of exacerbations compared with LABA (VI) monotherapy.

PRS88

DETERMINATION OF AVAILABILITY OF ANTIMICROBIAL PREPARATIONS FOR TREATMENT OF COMMUNITY-ACQUIRED PNEUMONIA IN UKRAINE

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OBJECTIVES: Data of british specialists show, that 5-11 out of 1000 adults have community-acquired pneumonia (CAP) every year, which is 5-12% of all cases of lower respiratory tract infections. The rate of CAP took over 3% in the structure of total respiratory organs disease rate in Ukraine within years 2007-2011. **METHODS:** The data of use of antimicrobial preparations (AP): cephalosporins (ceftriaxone), penicillins (amoxicillin and enzyme inhibitor), macrolides (azithromycin) and fluoroquinolones (ciprofloxacin, levofloxacin) for CAP treatment in Kharkiv hospital were used. Analysis of affordability as of index of payment capacity (Ca. s.) of trade names (TNs) provided in pharmaceutical market of Ukraine on indicated INN has been carried out to determine the availability of such preparations for wider population of Ukraine. **RESULTS:** Results of the AP affordability analysis made in five groups of INN, showed, that the ratio of therapy of high, middle and low availability for each AP group is different, but in all pharmacological groups except for ceftriaxone group, highly available therapy prevails. Percentage of highly available preparations in the studied groups of INN is: azithromycin (92.2%) > ciprofloxacin (74.3%) > amoxicillin and enzyme inhibitor (67.5%) > ceftriaxone (49.02%) > levofloxacin (46.94 %). As of preparations of middle availability, costing 5% - 15% of average monthly salary, ceftriaxone preparations are most (49.02%), azithromycin preparations are least (6.49%). There are no low availability preparations in ciprofloxacin fluoroquinolone group. Cephalosporins and macrolides group preparations have one AP of low availability. Pharmacotherapy with application of preparations-analogous to levofloxacin, is costly, as 32.7% of preparations of this group are preparations of low availability (16 AP). **CONCLUSIONS:** Antibacterial preparations needed for treatment of CAP are present in the pharmaceutical market of Ukraine in wide range of preparations and cost. It makes them available to various social groups.

PRS89

HOW MUCH THE APPROPRIATE TOBACCO PRICE WOULD BE?: A DISCRETE CHOICE EXPERIMENT OF GENERAL PUBLIC IN JAPAN

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OBJECTIVES: Though tobacco price increases are effective in reducing tobacco consumption and prevalence of smoking, tobacco-tax in Japan is still lower than those in other developed countries. General public, particularly non-smokers, may think that